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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,991	09/12/2003	Andrew L. Van Brocklin	200311745-1	8591

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EXAMINER

PHAM, HAI CHI

ART UNIT PAPER NUMBER

2861

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/660,991	Applicant(s) VAN BROCKLIN ET AL.	
	Examiner Hai C. Pham	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 16-21, 23-26, 28, 33-43, 49-53, 55-58 and 61-63 is/are rejected.
- 7) ☒ Claim(s) 11-15, 22, 27, 29-32, 44-48, 54, 59 and 60 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/12/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/21/03, 01/29/04, 02/09/05</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 26 recites the following limitation “the recorded signal”, which appears to lack antecedent basis. Claim 26 should claim dependency from claim 24 (instead of claim 23) where the antecedence of the limitation is being found.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-3, 16, 23, 33, 35-37, 49, 55-57, 61 are rejected under 35 U.S.C. 102(e) as being anticipated by Morishima (Pub. No. U.S. 2004/0004912).

Morishima discloses a processor-readable medium comprising processor-executable instructions for focusing optics (paragraph [0063]), the processor-executable instructions comprising instructions for generating a data profile (e.g., contents of the focus control), wherein the data profile is configured to provide signals for operation of an actuator, wherein the signals result in focus of the optics on a label region of an optical disc (paragraph [0072]), and printing an image on the label region of the optical disc while focusing the optics by applying signals to the actuator according to the data profile (paragraphs [0078]-[0079]).

Morishima further teaches:

- wherein generating the data profile comprises further instructions for configuring a look-up table (e.g., RAM) with signal data (e.g., actuator driving voltage), wherein the signal data are associated with focusing on locations within the label region (paragraph [0076]),
- wherein generating the data profile comprises further instructions for configuring a function to generate signal data, wherein the function associates locations within the label region with appropriate signals (paragraphs [0088]-[0089]),

- indexing the data profile according to an angular orientation of the optical disc, and fetching data from the data profile according to the angular orientation of the optical disc during the printing of the image on the label region (paragraph [0010]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 8-9, 24, 26, 28, 40-41, 43, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima in view of Yonezawa et al. (U.S. 6,829,203).

Morishima discloses all the basic limitations of the claimed invention except for applying an AC component of a signal to the actuator to cause the optics to pass through a focal point in both directions on each cycle of the AC component and recording a voltage into a voltage data look-up table which was associated with a SUM signal peak, adjusting the recorded voltage by a phase shift corresponding to a lag time associated with the operation of the actuator.

Yonezawa et al. discloses an optical disk apparatus and focus processing method by applying an AC signal to the actuator (Fig. 14) to cause the optics to pass through a focal point in both directions on each cycle of the AC signal (Figs. 15-18),

such that the focus control output signal with a phase adjusted value for the actuator is recorded in function of the angle of rotation of the spindle motor (col. 6, lines 15-57).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the AC signal for driving the actuator during the calibration process in the device of Morishima as taught by Yonezawa et al. The motivation for doing so would have been to provide an accurate focus control signal independent of the substrate thickness variation of the optical disc.

7. Claims 4-7, 10, 24-25, 38-40, 42, 58 rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima in view of Kadlec et al. (U.S. 6,813,226).

Morishima discloses all the basic limitations of the claimed invention except for generating coefficient data for a Fourier series or for a polynomial series, applying an AC component of a signal to the actuator to cause the optics to pass through a focal point in both directions on each cycle of the AC component and recording a voltage into a voltage data look-up table which was associated with a SUM signal peak, wherein the sum signal peak is determined by measuring sides of the sum signal peak and averaged.

Kadlec et al. discloses a calibration process of a focus sum threshold in a focus servo system by driving an optical pick-up unit through a focus position, e.g., by moving the optical pick-up unit between its closest position to an optical medium and its farthest position from the optical medium and recording the necessary signal for driving the optical pick-up unit, which reaches the just-focus position based on the sum signal, the

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accumulated sum signals or the average of the two peaks (col. 55, line 15 to col. 56, line 40). Kadlec et al. further teaches using a Fourier transform algorithm or determining the coefficient of a polynomial series for executing a focus loop gain calibration (Fig. 23).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the AC signal for driving the actuator during the calibration process while using the sum signal or the averaged value to determine the signal level for the focus control in the device of Morishima as taught by Kadlec et al. The motivation for doing so would have been to provide an accurate focus control signal independent of the substrate thickness variation of the optical disc.

8. Claims 17-20, 50-52, 62, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima in view of Büchler (U.S. 6,266,305).

Morishima discloses all the basic limitations of the claimed invention except for interpolating between measured signals and applying the interpolated values to the actuator.

Büchler discloses a control device for compensating an error in the tracking and focusing of a laser beam onto optical recording media based on the sum signal obtained from a four-quadrant detector, wherein the control process uses an interpolation approach to obtain the desired value by linear or non-linear interpolation of a small number of measured values (see Fig. 4 and associated discussions).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the interpolation method in Morishima control device as taught by Büchler. The motivation for doing so would have been to shorten the time for carrying out the control process as suggested by Büchler.

9. Claims 21, 34, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima in view of Biber et al. (U.S. 4,182,563).

Morishima discloses all the basic limitations of the claimed invention except for configuring the data profile as a piece-wise continuous function.

Biber et al. discloses a focus control system in which the axial position of the lens is approximated by a piecewise function as represented by the curve (52, Fig. 2) that fits within the limits of the focusing ranges of the lens (col. 4, lines 1-40).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a piecewise continuous function to adjust the position of the moving focus lens in the device of Morishima as taught by Biber et al. The motivation for doing so would have been

Allowable Subject Matter

10. Claims 11-15, 22, 27, 29-32, 44-48, 54, 59-60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of claims 11, 27, 29, 44, 59 is the inclusion therein, in combination as currently claimed, of the limitations “calibrating the actuator to determine an angle by which the actuator lags an input signal for frequencies associated with printing the image at least two radial distances from a hub of the optical disc” and “organizing the data profile according to the at least two radial distances and according to signals resulting in focus in a plurality of sectors of the optical disc”, which are not found taught by the prior art of record considered alone or in combination.

The primary reason for the indication of the allowability of claims 15, 32, 48, 60 is the inclusion therein, in combination as currently claimed, of the limitations “wherein generating the data profile comprises instructions for including data within the data profile associated with at least two radial distances from a center of the optical disc”, and “wherein the data associated with each radial distance is phase-shifted according to a lag-time of the actuator at a frequency associated with printing a portion of the image on the label region of the optical disc located approximately at the radial distance”, which are not found taught by the prior art of record considered alone or in combination.

The primary reason for the indication of the allowability of claims 22 and 54 is the inclusion therein, in combination as currently claimed, of the limitation “wherein the instructions which configure the piece-wise continuous function phase-shift the piece-wise continuous function by an angle associated with a lag time associated with the

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operation of the actuator", which is not found taught by the prior art of record considered alone or in combination.

Claims 12-14, 30-31, 45-47 are allowable because they are dependent from claims 11, 29 and 44 above.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER

July 13, 2005